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Abrupt Sea Surface Temperature changes during The Last Glacial-Interglacial Transition in the Iberian margin: Sea Level implications

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Uk'37-SST and organic terrestrial biomarkers were used to reconstruct Sea surface temperature (SST) and continental input in a shallow core (D13882) from the Tagus mud patch (Iberian margin) during last glacial and interglacial transition (LGIT).
In the western Iberian margin the Heinrich 1 (H1) and the Younger Dryas (YD) represent two extreme episodes of cold sea surface temperature conditions mediated by a marine warm phase that coincides with the Bolling-Allerod event (B-A) in the neighbor continent. Following the YD event, an abrupt sea surface warming marks the beginning of the Holocene in this region. However, SST values and amplitude of variation recorded in core D13882 differ from deep sea core MD03- 2699 and other available palaeoclimate sequences from this region. While the SST values from most deep sea cores reflect the latitudinal gradient detected on the Iberian Peninsula during H1 and B-A, the shallow core (D13882) SSTs are colder than the ones recorded in the deep sea. This suggests that a supplementary input of cold freshwater coming from the continent reached shallow areas. This hypothesis is supported by the high terrigenous biomarkers and total organic carbon content as well as by the dominance of tetra alkenone in the Tagus mud patch.
Furthermore, the comparison of all western Iberia SST records suggest that the SST increase during the B-A event started 1,000 yr before the meltwater pulse 1A (mwp-1A) and attained maximum values during or slightly after this sea level rise episode. Conversely, the sharp SST increase in the Iberian margin during the YD/Holocene transition, is synchronous with the meltwater pulse 1B (mwp-1B). The decrease of continental input in the Tagus mud patch confirms a sea level rise in the region. Thus, the synchronism between the maximum warming in the mid-latitudes of the western Iberian margin, in the adjacent landmasses and temperature in Greenland suggest that the mwp-1B, could have been initiated in the Northern Hemisphere rather that in the South.